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# Taxicab Entrepreneurs' Attitude to Continue Using e-Hailing Platforms in South Africa

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**Abstract**

Taxicab entrepreneurs who operate on e-hailing platforms in South Africa face challenges such as earning below minimum wage, lacking employment benefits, working long hours, and experiencing victimisation by traditional taxicab operators. The key question is why these entrepreneurs continue using e-hailing platforms despite unfavourable working conditions. This study proposed that technology adoption factors enable entrepreneurs to overcome challenges and encourage them to keep using e-hailing platforms. Based on this assumption, this study investigated the determinants of technology adoption that influence the attitude of taxicab entrepreneurs to continue using e-hailing platforms in South Africa. The researchers gathered quantitative data from 253 entrepreneurs in Johannesburg, South Africa and tested the hypotheses with multiple regression analysis. The results demonstrated that perceived usefulness, benefits, and security strongly influenced entrepreneurs' willingness to continue operating on e-hailing platforms. However, perceptions of convenience, trust, and perceived ease of use did not affect their decision to use e-hailing services. Theoretically, this study pinpointed the factors that drive and hinder the continued use of e-hailing applications. Practically, the results provide insights into understanding long-term usage, user satisfaction, and the success of e-hailing in developing countries undergoing digital transformation, such as South Africa.

**Keywords**: e-Hailing platform, South Africa, Technology adoption, Perceived usefulness, Perceived benefits, Perceived security

## 1. INTRODUCTION

The rise of gig economy platforms has been hailed as a potential solution to the high unemployment rates in South Africa and other developing nations, offering new avenues for economic participation [1,2]. These platforms, particularly in the e-hailing sector, have indeed generated a substantial number of jobs. However, while they promise economic opportunities, they have also sparked significant concerns about the working conditions they impose on workers across various countries [3]. In South Africa, as in other developing nations, gig workers often face exploitative circumstances that contrast sharply with the ideal of flexible, autonomous work. These issues are rooted in a disconnect between the labor laws

of the host country and the operational practices of gig platform companies, which often fail to provide adequate protection or remuneration for workers [1,4].

The literature identifies several key challenges facing e-hailing drivers, notably poor working conditions, below-minimum wage earnings, and a lack of employment benefits such as health insurance, paid leave, or overtime compensation [1,4]. Gig platform companies, which are largely global capitalist enterprises, frequently exploit these gaps. For instance, e-hailing drivers in South Africa, Bangladesh, and Ghana have reported receiving pay that falls below the minimum wage threshold, despite the companies' significant revenues and market power [1,4,5]. In South Africa, disputes over inadequate compensation have sparked significant tensions between Uber and its drivers, with attempts to negotiate better pay conditions often yielding little to no results [1]. To make ends meet, many drivers resort to working longer hours, further compounding their vulnerability. In contrast, in Bangladesh, some drivers have been known to exploit the platform's structure by bypassing it to secure clients directly, thereby avoiding the platform's fees and retaining more of their earnings [5].

Legally, gig platforms often operate outside the scope of local labor laws, resulting in considerable disparities between the working conditions that platforms impose and the protections afforded by the labor laws in countries like South Africa [4,5]. In fact, research has highlighted significant contradictions in legal rulings between countries. For example, in the UK, a labor court ruled in favor of e-hailing drivers, recognizing them as employees entitled to benefits, while in South Africa, a similar case was dismissed due to jurisdictional issues [1,4]. This inconsistency in legal treatment underlines the vulnerability of e-hailing workers who are caught in a grey area of labor law, where they are neither fully recognized as employees nor granted the protections that come with formal employment.

Moreover, a distinctive challenge faced by South African e-hailing drivers is the physical violence they endure from traditional, unionized taxi operators. In several instances, taxi operators have used violence to maintain market control, targeting e-hailing drivers with incidents of vigilantism, including vehicle damage and physical assaults, particularly in cities like Johannesburg [7,8]. These acts of aggression underscore the intense competition within the transport sector and add an additional layer of insecurity for e-hailing workers.

Given these significant challenges, it raises an important question: Why do entrepreneurs continue to operate within such a precarious environment? The answer lies not only in the adverse working conditions but also in the factors driving the adoption of technology and the perceived benefits of e-hailing platforms. Despite the challenges, the adoption of these platforms remains appealing to many entrepreneurs, influenced by various technological, economic,

and social factors. This study aims to explore these determinants of technology adoption, specifically investigating the factors that influence South African e-hailing drivers' willingness to continue using these platforms despite the odds. By drawing on insights from the field of Information Systems (IS), this research will provide a comprehensive understanding of the complex decision-making processes at play. The following sections will outline the research methods employed to explore this topic further.

## 2. METHODS

The research was conducted in four stages. Initially, the study commenced with the formulation of a research question in Section 1. Section 2.1 elaborates on the theoretical background, introduces the research model, and presents the hypotheses. The data collection procedure is outlined in Section 2.2. The results are articulated in Section 3, followed by a discussion in Section 4. Ultimately, study limitation and conclusion is elaborated in Sections 5 and 6 respectively.

### 2.1. Theoretical background

Technology adoption can be comprehended within the framework of technology adoption theories, such as the Technology Acceptance Model (TAM)[9], Unified Theory of Acceptance and Use of technology (UTAUT) [10], UTAUT2[11], the Expectation-Confirmation Model (ECM) of IS Continuance[12], among others.

TAM hypothesises that the user's attitude (AT) towards the utilisation of technology is determined by the perceptions of its usefulness (PU) and ease of use (PEOU)[9]. Numerous studies have employed the TAM model to analyse e-hailing adoption, revealing that PU and PEOU substantially impact AT, which subsequently determines the actual use (AU) of e-hailing platforms[13]. The UTAUT framework was extended to UTAUT2, retaining original constructs and incorporating three additional constructs, namely hedonic motivation, perceived value, and habit. In UTAUT2, the voluntariness moderator was excluded, leaving age, gender, and experience[11]. The UTAUT theories have been extensively utilised in academic literature to explore e-hailing technology adoption [14,15].

Adoption theories exhibit limitations in predicting the adoption and sustained use of voluntarily adopted information systems[16]. Antecedents of voluntary adoption encompass technological trends, social influence, and economic considerations. Moreover, there is a debate that adoption theories such as TAM and UTAUT inadequately explain why certain users cease utilising technologies after initial adoption[12]. To cover that gap, the ECM[12] theory was proposed, which serves as a post-adoption theory for the comprehension of post adoption experiences on the services provided by an information system. The ECM posits

that the intention to continue using an information system is determined by three factors: post-perceived usefulness, confirmation, and satisfaction[12]. Additionally, satisfaction mediates between confirmation and post-perceived usefulness and continuance intention. Since its introduction, the ECM has undergone extensions and updates with the incorporation of two determinants, trust and user adaptation[17].

This study has chosen to adopt a selection of constructs from the theories, selected for their appropriateness in evaluating the attitude of taxicab entrepreneurs towards continued use of e-hailing platforms. These constructs include perceived benefits (PB), perceived trust (PT), perceived convenience (PC), perceived usefulness (PU), and perceived ease of use (PEOU).

### 2.1.1. Perceived Benefits (PB)

The adoption of technology serves to enhance business performance and augment return on investment[18]. From an operational perspective, an e-hailing platform constitutes a cloud-based Platform as a Service (PaaS), thereby enabling taxicab entrepreneurs to invest limited capital in software and hardware during the business initiation phase[19]. Moreover, customers possess the capability to request taxis from any location, thereby alleviating marketing overheads for entrepreneurs[20]. Logistically, the platform oversees booking, e-payment, customer communication, fleet management, and provides GPS coordinates for navigation[21]. Certain literature[20] posits that e-hailing platforms are efficient and profitable as drivers opt for the most efficient route to collect the customer. Nevertheless, it remains uncertain whether the perceived benefits would translate into profitability, given that as technology adoption becomes widespread across the market, profitability diminishes[22]. Consequently, it is imperative to ascertain whether perceived benefits would influence the attitude of taxicab entrepreneurs towards continued utilisation of e-hailing platforms. This study hypothesised that perceived benefits (PB) positively influence the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms.

### 2.1.2. Perceived trust

A technology that is reliable, secure, and effectively fulfils its intended functions engender user trust[23]. Trust is influenced by elements such as data security, the reputation of service providers, and the quality-of-service support[24]. Esteemed e-hailing platforms like Uber and Bolt are widely recognized and trusted for enhancing the efficiency of the transportation sector in developing countries[13]. The preservation of trust is critical for the ongoing utilisation by entrepreneurs. Nevertheless, in developing nations, factors such as insufficient bandwidth coverage and congested transport networks undermine the trust in e-hailing

platforms[25]. Consequently, it is vital to explore whether trust influences the attitude of taxicab entrepreneurs towards the continued use of e-hailing platforms. This study hypothesised that perceived trust (PT) positively influences the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms.

### 2.1.3. Perceived convenience

E-hailing platforms offer a mechanism for passengers to facilitate bookings from any location, while concurrently enabling drivers to receive bookings at their convenience[21]. The utilization of complex algorithms by e-hailing platforms ensures the efficient matching of available vehicles proximate to passengers, thereby reducing waiting times for pickups and enhancing passenger satisfaction[26]. The increase in business efficiency leads to higher profitability as drivers conserve fuel by not aimlessly driving in search of passengers[20]. Furthermore, e-hailing platforms implement a secure online payment system, thus providing convenience for both passengers and drivers[27]. Consequently, if a passenger requests transportation during peak hours, elevated fares result, benefitting taxicab operators economically. The various conveniences offered by e-hailing platforms, including online booking, secure payment systems, and real-time navigation and tracking, have been observed to positively influence the attitude towards the adoption of these platforms[20,27]. Hence, this study hypothesised that perceived convenience (PC) positively influences the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms.

### 2.1.4. Perceived security

Cybersecurity and physical security represent significant concerns for e-hailing taxicab entrepreneurs. Cyber threats, including malware, phishing, and denial-of-service attacks, have the potential to lead to system breaches by hackers, fraudulent transactions, unauthorized access to personal data, and damage to the e-hailing company's reputation[28]. Additionally, certain studies[29] have suggested that newly emerging and complex AI-driven cybersecurity threats have been identified, posing substantial challenges in terms of mitigation. Conversely, physical security threats have been demonstrated to adversely influence entrepreneurs' perceptions regarding the sustained utilisation of e-hailing platforms[28]. Incidents of physical harm due to criminal activities, including hijacking and robbery, feature prominently among these risks[30]. In South Africa, e-hailing taxicab drivers face severe aggression from traditional taxi operators aiming to monopolize the commuter transport sector[7]. Similarly, in Malaysia, drivers encounter risks such as robbery, harassment, and sexual harassment[31]. Nevertheless, research has documented the implementation of security strategies designed to address challenges, for example, the deployment of real-time GPS tracking for vehicles[32]. Considering this context, this study hypothesised that perceived security (PS)

positively influences the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms.

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### 2.1.5. Perceived Usefulness (PU) and Perceived Ease of Use (PEOU)

Perceived usefulness (PU) and perceived ease of use (PEOU) are constructs within the technology adoption model (TAM)[9]. Several studies have demonstrated that PU and PEOU are predictors of the intention to use e-hailing services among taxicab drivers[13,33]. Conversely, e-hailing platforms are regarded as user-friendly when they facilitate enhanced experiences for the driver[34]. Although these studies did not explicitly examine whether drivers will continue to use e-hailing platforms, it is inferred that drivers will continue to engage with these platforms if they are perceived as both useful and user-friendly. Consequently, it is hypothesised that perceived usefulness (PU) positively influences the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms. Furthermore, it is hypothesised that perceived ease of use (PEOU) positively influences the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms.

### 2.1.6. Conceptual Framework

The conceptual model provided in Figure 1 visualises the relationship between the constructs and the proposed hypotheses. The hypotheses as follow.

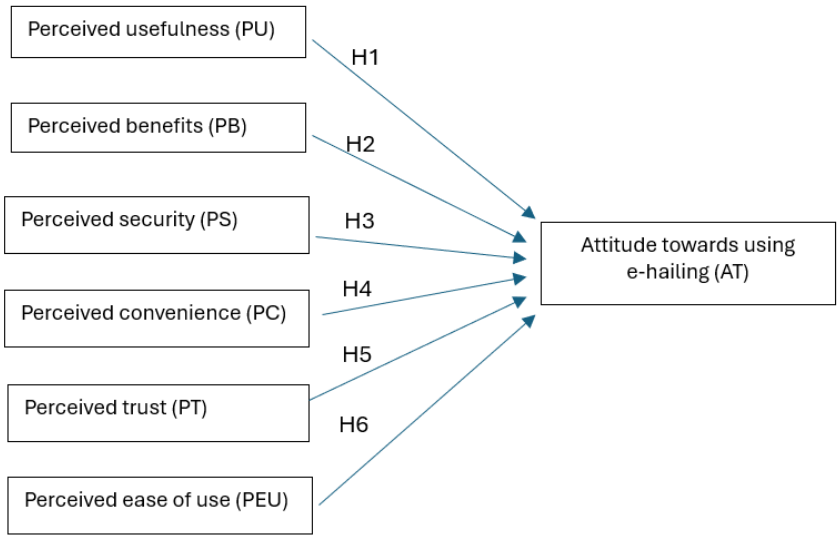


**Figure 1.** Research model

H1: Perceived usefulness (PU) positively influences the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms.
H2: Perceived benefits (PB) positively influence the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms.
H3: Perceived security (PS) positively influences the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms.
H4: Perceived convenience (PC) positively influences the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms.
H5: Perceived trust (PT) positively influences the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms.
H6: Perceived ease of use (PEOU) positively influences the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms.

### 2.2. Data collection procedure

A Likert scale questionnaire was administered to gather data from a cohort of 253 e-hailing taxicab entrepreneurs operating in Johannesburg central business district of Sandton, South Africa. Participants were randomly selected to voluntarily complete the questionnaire, and inclusion criteria required entrepreneurs to be driving their own vehicles. If a driver did not qualify as business owner, they were excluded from the study but were requested to forward the questionnaire to the business owner for completion. The development of the questionnaire was predicated on a research model informed by literature analysis, as illustrated in Figure 1. Six independent variables—PU, PB, PS, PC, PT, and PEOU—were postulated to influence the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms. The questions employed a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The instrument consisted of 28 questions in total.

Various methods were employed to ensure the validity of the questionnaire. At the content validity level, the questionnaire was built based on the constructs of the study's conceptual framework. Questions from previous studies were adopted and adapted to align with the study's context. Three researchers assessed the questionnaire to validate whether it effectively collected data that address the research questions. Additionally, pilot studies were conducted with a sample of 20 participants to evaluate the face validity. Exploratory factor analysis (EFA) was utilised to determine if the items of the questionnaire accurately represented the study's constructs. To ensure internal consistency, internal validity was assessed using the Cronbach's alpha reliability test.

IBM SPSS version 25 was utilised for the data analysis process. Statistical evaluations conducted included descriptive analysis, exploratory factor analysis, reliability testing and regression analysis.

## 3. RESULTS AND RESULTS

### 3.1. Descriptive results

An analysis was conducted on a data set comprising 253 responses, and insights were derived from measures of central tendency, refer to Table 1 for descriptive findings.

**Table 1:** Descriptive Results

| | Descriptive Statistics | | | | |
|---|---|---|---|---|---|
| | **N** | **Min** | **Max** | **Mean ($\bar{x}$)** | **Std. Deviation (s)** |
| PU | 253 | 1.00 | 5.00 | 3.23 | 1.08 |
| PB | 253 | 1.00 | 4.20 | 3.10 | 0.33 |
| PS | 253 | 1.00 | 5.00 | 4.07 | 0.81 |
| PC | 253 | 1.00 | 5.00 | 4.08 | 0.81 |
| PT | 253 | 1.00 | 5.00 | 3.26 | 0.83 |
| PEOU | 253 | 1.00 | 5.00 | 3.60 | 0.87 |
| AT | 253 | 1.00 | 5.00 | 3.33 | 1.09 |
| Valid N (listwise) | 253 | | | | |

PU - Perceived Usefulness; AT -Attitude; PB -Perceived Benefits; PS – Perceived Security; PC- Perceived Convenience; PT – Perceived Trust; PEOU – Perceived Ease of Use

High mean values were observed in the variables PS ($\bar{x}$ = 4.07, s = 0.81) and PC ($\bar{x}$ = 4.08, s = 0.81), indicating a tendency towards highly positive responses. Moderate mean values were evident for the variables PU ($\bar{x}$ = 3.23, s = 1.08), PT ($\bar{x}$ = 3.26, s = 0.83), AT ($\bar{x}$ = 3.33, s = 1.09), and PEOU ($\bar{x}$ = 3.60, s = 0.87), suggesting moderately positive responses. The construct PB (x = 3.10, s = 0.33) exhibited the lowest mean score and standard deviation, signifying consistent perceptions among participants. Conversely, the constructs PU, AT, and PT showed high standard deviations, reflecting diverse participant perceptions.

### 3.2. Exploratory Factor analysis and reliability

Principal Factor Analysis and Orthogonal Varimax rotation were employed, with a Kaiser-Meyer-Olkin (KMO) measure of 0.899, affirming the adequacy of the data. Bartlett's test of sphericity yielded significant results (Chi-square = 7079.470, $p < 0.001$), corroborating the existence of underlying relationships among the variables and the suitability of the data for factor analysis. The Principal Axis Factoring (PAF) extraction method coupled with an Oblique rotation was utilised. An Eigenvalue cut-off of 1.0 was established, revealing 6 factors within this threshold; however, only a single factor, Perceived Trust (PT), fell below this cutoff. The total cumulative variance accounted for 79.92%, as validated by the scree plot. Seven factors emerged from the analysis, with all item loadings exceeding 0.4. These seven factors corresponded with the theoretical constructs

shaping the taxicab entrepreneurs' inclination to continue utilising e-hailing applications. The identified latent variables were (1) Perceived Benefits (PB), (2) Perceived Ease of Use (PEOU), (3) Perceived Usefulness (PU), (4) Perceived Security (PS), Perceived Trust (PT), and Attitude (AT), refer to Table 3.

**Table 2.** Reliability results

| Construct | Cronbach Alph (α) |
|---|---|
| PU | 0.961 |
| PB | 0.938 |
| PS | 0.913 |
| PC | 0.935 |
| PT | 0.593 |
| PEOU | 0.819 |
| AT | 0.963 |

PU - Perceived Usefulness; AT -Attitude; PB -Perceived Benefits; PS – Perceived Security; PC- Perceived Convenience; PT – Perceived Trust; PEOU – Perceived Ease of Use

**Table 3**. Exploratory Factor Analysis results

| | Component | | | | | | |
|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| PB_1 | 0.690 | | | | | | |
| PB_2 | 0.787 | | | | | | |
| PB_3 | 0.870 | | | | | | |
| PB_4 | 0.662 | | | | | | |
| PB_5 | 0.888 | | | | | | |
| PEOU_1 | | 0.847 | | | | | |
| PEOU_2 | | 0.864 | | | | | |
| PEOU_3 | | 0.895 | | | | | |
| PEOU_4 | | 0.856 | | | | | |
| PEOU_5 | | 0.839 | | | | | |
| PU1_1 | | | 0.872 | | | | |
| PU1_2 | | | 0.844 | | | | |
| PU1_3 | | | 0.887 | | | | |
| PU1_4 | | | 0.896 | | | | |
| PU1_5 | | | 0.859 | | | | |
| PS_1 | | | | 0.835 | | | |
| PS_2 | | | | 0.868 | | | |
| PS_3 | | | | 0.857 | | | |
| PS_4 | | | | 0.719 | | | |
| PC_1 | | | | | 0.785 | | |

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| | Component | | | | | | |
|---|---|---|---|---|---|---|---|
| | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| PC_2 | | | | | 0.831 | | |
| PC_3 | | | | | 0.846 | | |
| PC_4 | | | | | 0.830 | | |
| PT_1 | | | | | | 0.841 | |
| PT_2 | | | | | | 0.828 | |
| AT_1 | | | | | | | 0.797 |
| AT_3 | | | | | | | 0.840 |
| AT_4 | | | | | | | 0.877 |

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 7 iterations.
PU - Perceived Usefulness; AT -Attitude; PB -Perceived Benefits; PS – Perceived Security; PC- Perceived Convenience; PT – Perceived Trust; PEOU – Perceived Ease of Use

The Cronbach-Alpha scores for most constructs exceeded the recommended reliability threshold of 0.7[35]. Nonetheless, one construct exhibited a Cronbach Alpha below 0.7, indicative of low consistency (PT: $\alpha = 0.593$), see Table 2.

### 3.3. Regression results

A multiple linear regression analysis was conducted to examine whether the independent constructs PB, PT, PC, PS, PU, and PEOU had a significant effect on predicting the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms. The results of this regression analysis are detailed in Table 4 (Model Summary Results), Table 5 (ANOVA Results), and Table 6 (Coefficients Results).

**Table 4.** Model summary results

| Model Summary[b] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Model** | **R** | **$R^2$** | **Adj $R^2$** | **Std Error** | **Change Statistics** | | | | |
| | | | | | **$R^2$ change** | **F change** | **df1** | **df2** | **Sig. F change** |
| 1 | .645[a] | 0.416 | 0.402 | 0.84643 | 0.416 | 29.184 | 6 | 246 | 0.000 |

Note: Significant at $p < 0.05$.
a. Predictors: (Constant), PEOU, PB, PT, PU, PC, PS
PU - Perceived Usefulness; PB -Perceived Benefits; PS – Perceived Security; PC- Perceived Convenience; PT – Perceived Trust; PEOU – Perceived Ease of Use
Dependent Variable: AT -Attitude

**Table 5.** ANOVA results

| ANOVA[a] | | | | | | |
|---|---|---|---|---|---|---|
| **Model** | | **SS** | **df** | **MS** | **F** | **Sig.** |
| 1 | Regression | 125.451 | 6 | 20.909 | 29.184 | .000[b] |
| | Residual | 176.247 | 246 | 0.716 | | |
| | Total | 301.698 | 252 | | | |

Note: Significant at $p < 0.05$.
a. Dependent Variable: AT -Attitude
b. Predictors: (Constant), PEOU, PP, PT, PU, PC, PS
PU - Perceived Usefulness; PB -Perceived Benefits; PS – Perceived Security; PC-Perceived Convenience; PT – Perceived Trust; PEOU – Perceived Ease of Use

The model demonstrated statistical significance ($R^2 = 0.416$, $F(6, 246) = 29, 184$, $p < 0.05$) as evidenced in Tables 4 and 5. The $R^2$ value suggests that 41.6% of the variance in AT is accounted for by the predictors PU, PB, PS, PT, and PEOU. Despite the model's limited explanatory power, it exceeds the 10% threshold recommended for research in the social sciences[36].

The regression equation was AT = 1.709 + 0.590(PU) - 0.562(PB) + 0.319(PS) - 0.074(PC) – 0.024(PT) - 0.018(PEOU). The findings indicate that the independent variables PU ($\beta = 0.590$, $p = 0.0001$), PB ($\beta = -0.562$, $p = 0.006$), and PS ($\beta = 0.319$, $p = 0.001$) significantly influenced the attitude of taxicab entrepreneurs regarding the continued use of the e-hailing platform (AT). Conversely, the results indicate that the independent variables PC ($\beta = 0.074$, $p = 0.373$), PT ($\beta = -0.019$, $p = 0.707$), and PEOU ($\beta = -0.018$, $p = 0.785$) were not found to be significant. The 95% confidence intervals for these nonsignificant independent variables, such as PC (-0.090, 0.239), encompass '0', thereby confirming the insignificance of these constructs, refer to Table 6.

**Table 6.** Model Coefficients

| Coefficients | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Model** | | **Unstandardised Coefficients** | | **t** | **Sig.** | **95.0% Confidence Interval for β** | | |
| **1** | | **β** | **SE** | | | **Lower Bound** | **Upper Bound** | **VIF** |
| | (Const) | 1.709 | 0.575 | 2.974 | 0.003 | 0.577 | 2.841 | |
| | PU | 0.590 | 0.053 | 11.218 | 0.000 | 0.486 | 0.694 | 1.132 |
| | PB | -0.562 | 0.202 | -2.785 | 0.006 | -0.960 | -0.165 | 1.654 |
| | PS | 0.319 | 0.097 | 3.297 | 0.001 | 0.128 | 0.509 | 2.157 |
| | PC | 0.074 | 0.084 | 0.892 | 0.373 | -0.090 | 0.239 | 1.605 |
| | PT | -0.024 | 0.065 | -0.376 | 0.707 | -0.151 | 0.103 | 1.019 |
| | PEOU | -0.018 | 0.066 | -0.273 | 0.785 | -0.148 | 0.112 | 1.150 |

Note: Significant at $p < 0.05$.
Dependent Variable: AT - Attitude
PU - Perceived Usefulness; PB -Perceived Benefits; PS – Perceived Security; PC-Perceived Convenience; PT – Perceived Trust; PEOU – Perceived Ease of Use;

Table 7 presents a concise summary of the findings. The data illustrate that the three hypotheses, H1, H2 and H3, were deemed significant.

**Table 7.** Summary of findings

| Hypotheses | Path | β | t-value | p-value | Results |
|---|---|---|---|---|---|
| H1 | PU → AT | 0.590 | 11.218 | 0.000 | Supported |
| H2 | PB → AT | -0.562 | -2.785 | 0.006 | Supported |
| H3 | PS → AT | 0.319 | 3.297 | 0.001 | Supported |
| H4 | PC → AT | 0.074 | 0.892 | 0.373 | Not supported |
| H5 | PT → AT | -0.024 | -0.376 | 0.707 | Not supported |
| H6 | PEOU → AT | -0.018 | -0.273 | 0.785 | Not supported |

Note: Significant at $p < 0.05$.
PU - Perceived Usefulness; PB -Perceived Benefits; PS – Perceived Security; PC-Perceived Convenience; PT – Perceived Trust; PEOU – Perceived Ease of Use; AT-Attitude to Continue Using E-hailing

### 3.4. Discussion

The study proposed that the attitude (AT) to continue using e-hailing platforms among taxicab entrepreneurs is determined by six independent constructs: perceived usefulness (PU), perceived benefits (PB), perceived security (PS), perceived convenience (PC), perceived trust (PT), and perceived ease of use (PEOU). A regression analysis was conducted to examine the impact of these constructs through six hypotheses (H1, H2, H3, H4, H5, H6), refer to Figure 1. Three of these hypotheses were found to be significant (H1, H2, H3), refer to Tables 6 and 7.

The first hypothesis, H1: Perceived usefulness (PU) positively influences the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms. The results endorsed the proposed hypothesis, with unstandardised coefficients of ($\beta = 0.590$, $p < 0.05$) and measures of central tendency ($\bar{x} = 3.23$, $s = 1.08$). The large standard deviation indicates that taxicab entrepreneurs held varying perceptions regarding the usefulness of e-hailing platforms. The findings can be interpreted to suggest that if taxicab operators perceive e-hailing platforms as useful, they are likely to continue operating their taxicabs on these platforms. This finding aligns with studies conducted in other countries, which found that perceived usefulness significantly influenced the intention to continue using e-

hailing platforms, as evidenced in research from Malaysia[33], Vietnam[37], and China[38].

The second hypothesis, H2: Perceived benefits (PB) positively influence the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms. The findings substantiated the proposed hypothesis, evidenced by unstandardised coefficients of ($\beta$ = -0.562, p = 0.006) and central tendency values of ($\bar{x}$ = 3.10, s = 0.33). Analysing the mean, standard deviations, and unstandardised beta coefficients provides a clear understanding of the results. The mean slightly exceeds the neutral score of 3, and the low standard deviation indicates homogeneity in respondents' perceptions concerning the benefits of e-hailing. The findings imply that while some respondents exhibited slight satisfaction with the benefits, others remained neutral, abstaining from expressing their perceptions. Considering the negative Beta value ($\beta$ = -0.562), it signifies an inverse relationship between the dependent and independent variables. The negative Beta value indicates that for each increment of one standard deviation unit, the attitude of entrepreneurs decreases by one, assuming all other variables are held constant. This suggests that some respondents potentially harbour a negative perception of the benefits derived from e-hailing platforms. From the standpoint of South Africa, the primary benefit associated with operating an e-hailing platform is income. Previous research in South Africa corroborated the dissatisfaction among e-hailing operators regarding the benefits received, with many considering the income insufficient[39]. This aligns with research indicating that e-hailing platforms provide compensation below the minimum wage in developing nations, such as South Africa[2], Bangladesh[5], and Ghana[4]. Furthermore, literature indicates discontent among some e-hailing operators with the job allocation algorithms, specifically criticising their transparency and fairness[40,41]. Hence, it can be inferred that the perceived benefits of e-hailing platforms may not exert a substantial influence on the willingness to continue utilising e-hailing platforms for taxi operations in South Africa.

The third hypothesis, H3: Perceived security (PS) positively influences the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms. This hypothesis was empirically supported, as evidenced by a positive unstandardised Beta value ($\beta$ = 0.319, p = 0.001) with measures of central tendency (x = 4.07, s = 0.81). The confidence interval for the Beta value was non-zero, ranging between the lower and upper bounds of 0.128 and 0.509, respectively, indicating that a one-standard-deviation increase in perceived security corresponds to an equivalent unit increase in entrepreneurs' favourable attitudes toward e-hailing platforms, provided other variables remain constant. The findings indicate that most taxicab entrepreneurs concurred or strongly concurred with the notion that continued use of e-hailing platforms is dependent upon platform security. Security, in this context, encompasses the cybersecurity of online transactions and

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physical safety. From a cybersecurity standpoint, the data suggests that entrepreneurs are more likely to continue using e-hailing platforms when financial transactions are perceived to be secure against cyber threats. This observation is consistent with previous research, which demonstrated that perceived security considerably influences the sustained use of online payment systems within e-hailing contexts[42]. Similarly, from a physical security perspective, the assurance of personal safety is a determinant factor for entrepreneurial engagement with e-hailing platforms. The results of the present study are in line with findings from prior research, which established that physical security substantively affects the ongoing use of e-hailing platforms by entrepreneurs in this domain[43]. Accordingly, perceived security emerges as a significant determinant of the attitude of taxicab entrepreneurs to continue using e-hailing platforms.

Contrary to expectations, three hypotheses were identified as non-significant and opposing our initial proposition. The first non-significant hypothesis is H4: Perceived convenience (PC) positively influences the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms. Our findings are inconsistent with prior studies which concluded that perceived convenience positively influences the attitude towards continued use of e-hailing[20,27]. The conveniences provided by e-hailing platforms include online booking, secure payment systems, online payment, and real-time navigation and tracking[27]. Consequently, the results indicate that perceived convenience may not be a determining factor influencing taxicab entrepreneurs continued use of e-hailing platforms.

The second hypothesis, which was not supported by the data, is H5: Perceived trust (PT) positively influences the attitude (AT) of taxicab entrepreneurs towards the continued utilisation of e-hailing platforms. The findings of this study are distinctive as there is a lack of extant literature examining the relationship between perceived trust and the attitude towards to continue using e-hailing platforms. Within the South African context, the views expressed by the participants in this study may be attributed to the challenges encountered by e-hailing services, such as insufficient bandwidth coverage, congestion within the transport network[25], and governmental failure to institute a regulatory framework governing e-hailing[2]. The absence of a regulatory framework in South Africa has led to conflicts between e-hailing operators and traditional taxicab operators[8]. Consequently, perceived trust does not constitute a determinant of continued e-hailing platform usage among taxicab entrepreneurs.

The third hypothesis, which was determined to be nonsignificant, is H6: The perceived ease of use (PEOU) influences the attitude (AT) of taxicab entrepreneurs towards the continued use of e-hailing platforms. Although these findings were not anticipated, a comprehensive literature search did not yield

studies examining the correlation between PEOU and the attitude of taxicab entrepreneurs towards ongoing usage of such platforms. Nevertheless, our findings resonate with prior research centered on commuters or passengers, which indicated that PEOU was not a determinant of the attitude regarding continuous engagement with e-hailing rides[44,45]. These results imply that taxicab entrepreneurs might persist in using e-hailing applications for reasons other than their perceived ease of use.

### 3.5. Limitations

The generalisability of the results of this study may have been constrained by the limited sample size and the specific site of data collection. The data were collected from Sandton, a central business district in Johannesburg. The perceptions of participants from a large urban area may differ from those of individuals from smaller cities or towns. Such differences could arise from the fact that tensions within the taxi transport industry vary by location and are notably pronounced in major urban centres. Data were collected from individuals directly affected by the situation under investigation, suggesting that participants may offer accurate responses, however, their emotions could introduce response bias. Due to the tension between e-hailing services and traditional taxicab entrepreneurs in South Africa, participants may have refrained from providing candid responses to avoid taking a definitive stance, possibly out of concern that the data could be misused against them. Despite these identified limitations, the study offers valuable insights into the attitudes of taxicab entrepreneurs regarding the ongoing use of e-hailing platforms.

## 4. CONCLUSION

This study examined the determinants of technology adoption that affect the attitudes of entrepreneurs toward the continued use of e-hailing platforms in South Africa. Six hypotheses were formulated to evaluate the determinants of technology adoption, revealing that three determinants exert a significant influence on the disposition of taxicab entrepreneurs to persist in utilising e-hailing platforms. These three determinants are identified as perceived usefulness, perceived benefits, and perceived security. The findings indicate that, although taxicab entrepreneurs operate within a business environment fraught with challenges, these challenges can be mitigated by the advantages conferred by technology adoption. This study advocates for further research into the model's nonsignificant constructs. A qualitative investigation could elucidate why perceived ease of use, perceived convenience, and perceived trust do not determine the attitudes of taxicab entrepreneurs concerning the continuous use of e-hailing platforms.

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